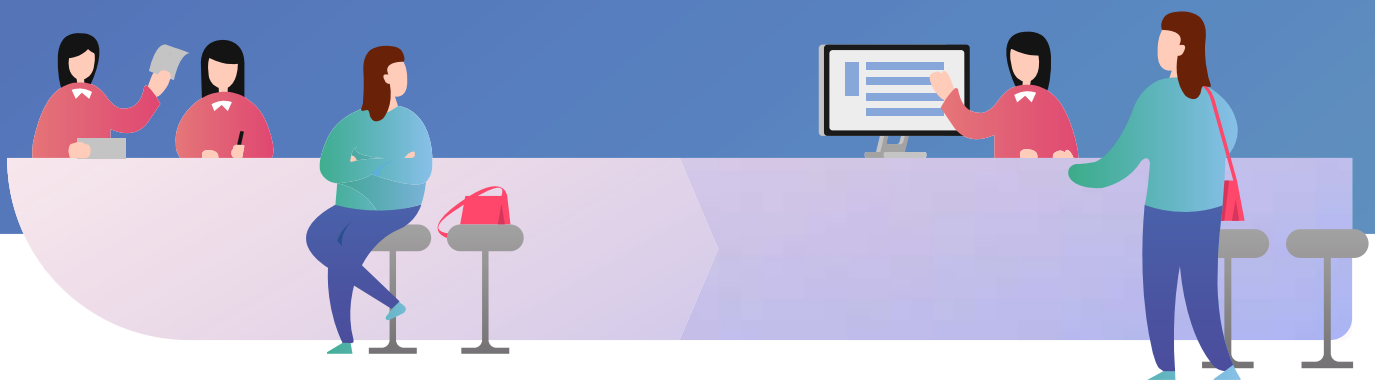
ViewSonic

WHY TOUCH SCREEN TECHNOLOGY?

An in-depth look at the basics of touch panel technology, benefits, and characteristics.



The world is turning digital and more and more of our daily interactions are being digitized.

One of the technologies facilitating this transition is touchscreen technology. Most of us are familiar with it. After all, if you own a smartphone, then you likely interact with a touchscreen on a daily basis.

Touch screen technology's usefulness and practicality are undeniable. So much so, in fact, that businesses have realized the benefits of adopting the technology as well. However, despite its simplicity for end users, there is more to this tech than meets the eye.

Ahead, we'll take a look into why it's a good idea to invest in touch monitor technology and discuss their potential to benefit your business. To understand this potential, we have to dive into the different touchscreen technology variatons.

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TYPES OF TOUCH TECHNOLOGY

When it comes to touch screen technology, there are a number of different types of technologies on the market, each with their own set of characteristics.

Resistive, optical, projected capacitive, and infrared are four of the most common touch screen technologies. Each have different applications and can support your business in a meaningful way. Below is an outline of the characteristics that are commonly associated with each of these technologies.

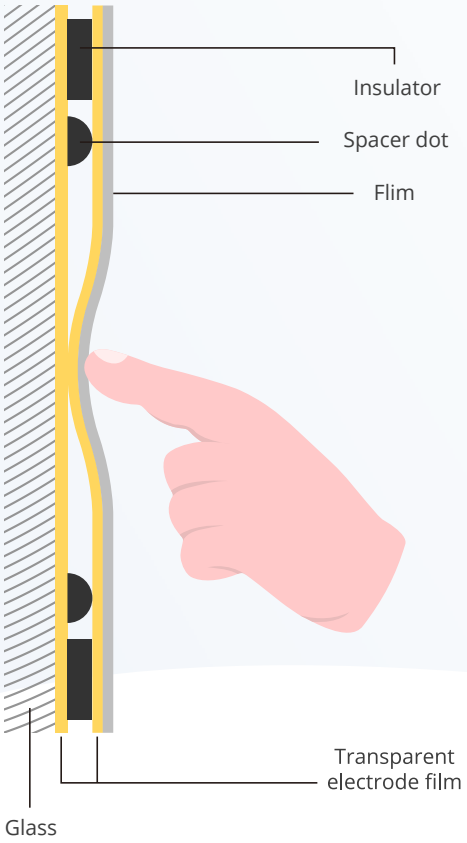
RESISTIVE TOUCH

Resistive touch technology can be found in an array of devices, including touch monitors and car navigation systems. Resistive panels are pressure sensitive, which means they use pressure placed directly on the screen as a means of detecting commands.

Resistive touch screen are generally single-point-touch displays and are typically less than 20 inches in size.

Unlike other touch technologies, resistive touch panels are covered by two layers of transparent electrode film with spacers in between. This pressure-based input method means that resistive panels can be operated with just about any type of touch, including finger, stylus, and even gloved touch.

As a result of the dual transparent film layers on top of the panel, the transmittance of light is not as strong as it is when using other types of touch technology. Resistive touch panels are also not known for being the most durable touch panel technology because pressure needs to be applied to the screen.



The cost of resistive touch is generally on the lower side when compared to different touch panel technologies, making them a good option for simple, single point touch applications.

Pros of Resistive Touch:

+ Cost effective touch solution
+ Finger, stylus, and glove touch compatible
+ Can still be used if there are water drops on the screen

Limitations of Resistive Touch:

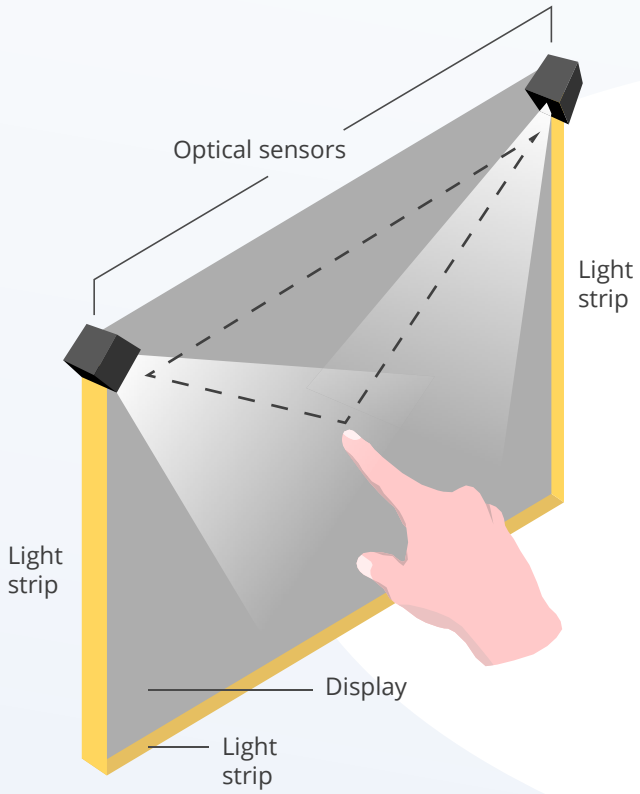
– Weaker light transmittance and less durable than other touch technologies
– Not capable of supporting true multi-touch

OPTICAL IMAGING TOUCH

Optical imaging touch technology uses infrared cameras and light to detect touches inputted onto the panel. Touch detection accuracy on optical imaging touch displays can vary based on the components used.

Optical imaging touch panels are multi-touch and typically range from 19 – 100 inches in size. Since touch recognition on these devices works by way of imaging, any form of touch, whether it be finger, stylus, gloved touch, etc. can be used to input commands on the screen.

Light transmittance on optical imaging touch screens tends to be very good because there are no obstructing coatings used over the screen itself.



In addition, optical touch displays tend to last for a long time because the light touches associated with this tech variant do not generally result in wear and tear.

Pros of Optical Imaging Touch:

+ High light transmittance
+ Durable
+ Any input method can be used (finger, stylus, glove, etc.)
+ Multi-touch

Limitations of Optical Imaging Touch:

– Not as compact as other touch technologies

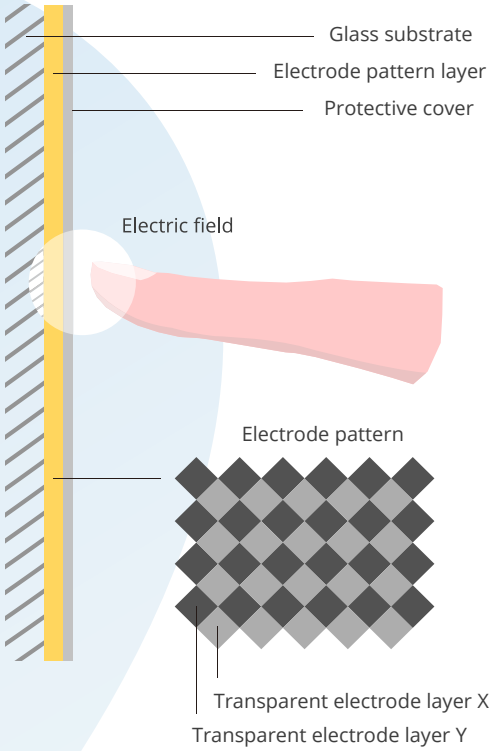
PROJECTED CAPACITIVE TOUCH

Projected capacitive touch is the touch technology commonly used in the smartphone market; if you use an iPhone then you're already familiar with using projective capacitive touch. Projected capacitive touch is normally used on smaller touchscreens and is known for highly precise touch recognition and speedy response times.

Projected capacitive touch panels are capable of multi-point touch and are most commonly less than 32 inches in size.

Since projected capacitive touchscreens detect touch commands by way of electrical currents, it is more challenging to make larger sized projected capacitive touch panels than it is to make smaller ones. Unlike resistive touch technology, projected capacitive touch panels can be interacted with via finger or conductive pen touch but not gloved touch.

The light transmittance of projected capacitive touch panels is very good, as is touch detection accuracy. In addition, the glass and plastic coatings on projected capacitive touch panel displays are generally very durable and dust resistant.



Projected capacitive touch is often touted as providing the best user experience out of all the touch technologies. Mostly because of its highly sophisticated.

Pros of Projected Capacitive Touch:

+ Best user experience
+ High touch detection accuracy
+ High light transmittance
+ Durable
+ Multi-touch

Limitations of Projected Capacitive Touch:

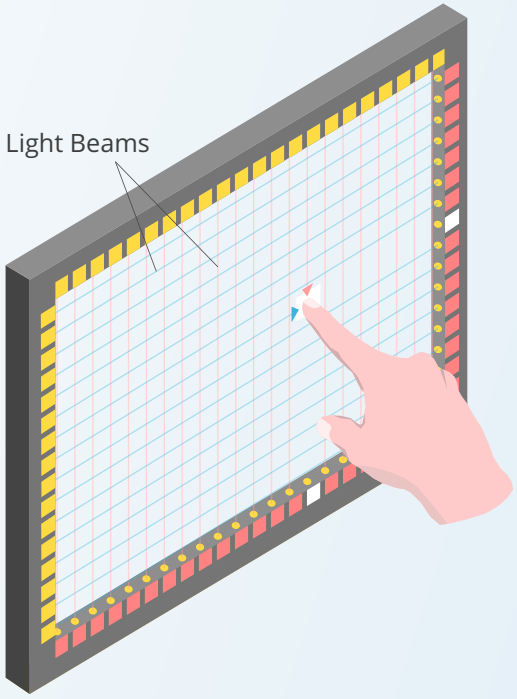
– No glove touch
– Higher cost

INFRARED TOUCH

Infrared touch technology uses light beam interruption as a means to detect touch commands. In infrared touch displays, infrared beams are organized in a grid over the panel itself and touch points are calculated when the beams are interrupted.

Infrared touch screens are capable of multi-point touch and can be found in sizes ranging from 20 – 150 inches. Commands can be inputted on an infrared touch panel by way of a finger touch, a thick stylus, or gloved touch, though touch detection accuracy can vary based on the internal components used.

Infrared touch panels tend to have good light transmittance and are quite durable, however having sunlight come into contact with an infrared touchscreen can negatively impact the user experience because of glare and reflections.



- Light Emitting Diodes
- Light Detectors
- Light Detectors which light beams are blocked

In addition to optical imaging touch, infrared touch is another technology that can be implemented for applications with larger screen sizes.

Pros of Infrared Touch:

+ High light transmittance
+ Durable
+ Multi-touch

Limitations of Infrared Touch:

– Sunlight can negatively impact user experience

A QUICK COMPARISON OF TOUCH TECHNOLOGIES

	Resistive	Surface Acoustic Wave	Optical Imaging	Projected Capacitive	Infrared
Transmissivity	Fair	Good	Good	Good	Good
Durability	Good	Good	Good	Good	Good
Handwriting	Fair	Fair	Fair	Good	Fair
Accuracy	Okay	Okay	Varies	Good	Varies
Typical Display Size	<20″	<20″	19-100″	<32″	20-150″
Multi-Touch?	not typically, but some demonstrated	not typically, but some demonstrated	yes	yes	yes
Input Methods	or stylus	or soft tip pen	or anything	or conductive pen	or thick stylus
Challenges	needs forceful touch but no sharp objects	rain, dust contamination	dust contamination strong light source*	can't use with thick gloves	sunlight, contamination wide bezel
Application	for basic 1 point touch	for basic 1 point touch	Medium to large size, indoor touch	For best user experience	Large size e-whiteboard

Excellent Good Fair Okay Varies

SUMMARY

RESISTIVE AND SAW

Ideal for high durability, 1-point-touch, glove and hand writing support

OPTICAL IMAGING

Ideal for high image clarity, higher touch sensitivity, support multi-touch events

PROJECTED CAPACITIVE

Ideal for multi-touch support, durability and sensitivity, and gesture control

INFRARED

Ideal for high image clarity, high durability with glove support

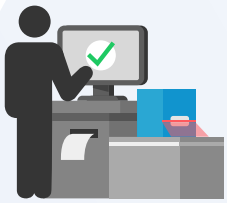
WHO USES TOUCH SCREEN TECHNOLOGY?

As we have lined out, there has been a strong shift towards touch panel technology, with more and more businesses adopting touch panels every year. In fact, you would be hard pressed to find a business today that isn't implementing some form of touch panel technology.

The reason for this is because businesses are realizing just how advantageous touch panel technology can be, thanks to their ability to increase productivity, improve customer experiences, and their simple to use interface. Some examples of industries using touch panel technology can be found below :

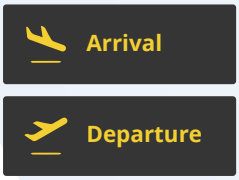
Smart retail and POS
Education
Industrial Use & Smart Factory
Finance & Financial Services Industry
Medical Applications

Just how are these industries implementing touch screen technology? Let's discuss a few examples of how touch panels are being used today.



Food & Beverage

Long queues at restaurant establishments during busy hours are always problematic for customers and store clerks. Waiting too long for service can lead to impatience, lost of customer and undesirably, a poor review of your business. Touch screen solutions can act as a self-service point for your customers to order and pay while they're waiting, display advertised content such as promotions and events to keep customers engaged.

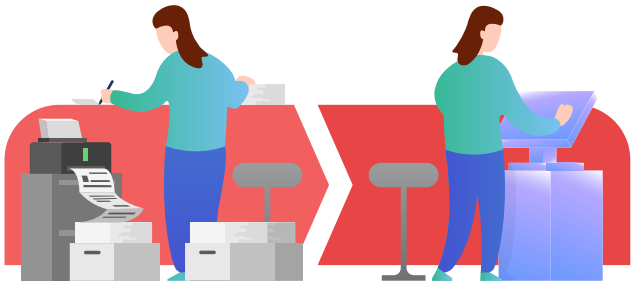


Transportation

Do you remember the days when arriving at the airport started with waiting in line for your boarding pass? Well, thankfully for all of you avid travelers out there, touch panel technology has changed this process for the better. Nowadays all you need to do is input your information, scan your passport, and off you go. Couple this with self-serve kiosks at the public transit stations in cities such as London and you'll be able to organize your entire journey from your fingertips.

Banking & Finance

Banking institutions are leveraging digital signature to digitize their workflow, saving both time and money. Digital signature solutions offer all the functionality of traditional pen and paper signature methods but with a plethora of additional benefits, such as heightened security and more. With digital signature, documents can be easily stored without the need for filing cabinets, digitally sent to customers, and easily retrieved for future reference.



BENEFITS OF TOUCH SCREEN TECHNOLOGY

Streamlined Processes
Touch control puts the power of your touch panel at your fingertips, resulting in faster display operations. In business settings, this reduction in time spent performing operations can give way to a multitude of benefits including shorter queue times and faster service for your customers. Moreover, these benefits can create a domino effect of positive outcomes, including higher customer satisfaction, better customer experiences, and greater brand loyalty from your customers.

Ease of Use
Since the introduction of touchscreen smartphones, the use of such technology has become near universal. As such, everyone has become a master. In this case, this technology's benefit is two-fold; it's easy to implement and it's faster for employees to operate. Easy implementation will enable employees to begin using the technology immediately without a learning curve, thus enabling faster operations.

Engaging & Interactive
Because touch panels are so versatile in the ways they can be implemented, they possess the ability to positively affect the user experience. Displaying engaging content for consumer interaction, for instance, is a good way to elevate your business above the competition.

Self-Service Feature
Beyond employee interactions, touch panels can be beneficial to customers. Therein, touch panel technology allows users to serve themselves. This functionality can be useful for mall or hotel information services and restaurant meal selection, to name just a few. This will allow employees more time to focus on higher priority tasks and will allow customers to take ownership of their own experiences.

Durability
Inherently, touchscreens must be able to withstand constant physical interaction. With durability and limited replacement in mind, touch panel producers aim for the greatest possible lifespans and accidental damage preventions.

Clutter Reduction
Non-touch panels, oftentimes, require additional peripherals for operation. Implementation of touch technology eliminates the need for these accessories and, through its faster operation, results in a more streamlined workspace.

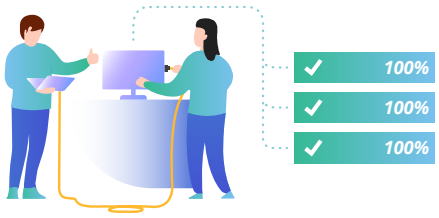
Increased Efficiency
Touch panel technology can increase efficiency in the workplace by, for example, reducing queue times. This efficiency increase translates into bottom line benefits by allowing employees to service more customers, thereby enhancing the customer experience.

Cost Effective
Digitizing your workflow with touch panel technology acts as a method of cost reduction by eliminating office supply expenditures. Touch displays also can reduce storage costs by eliminating the need for physical document storage.

WHAT FEATURES SHOULD A TOUCH SCREEN HAVE?

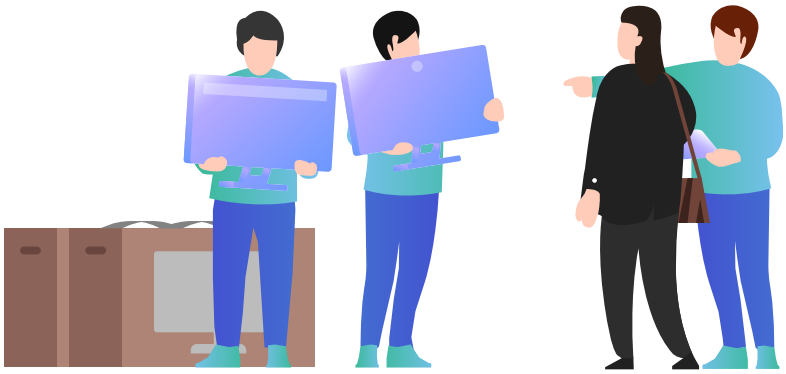
As a rule of thumb, any type of touch screen technology you choose should have the following characteristics:

Touch panels should be easy to use.
Since you will be asking employees to use a new type of technology it should be easy for them to pick up and begin using right off the bat. This will help save time training employees on how to use the new technology and will save money by allowing them to start seamlessly using the technology to improve your business.



Touch panels should be easy to implement.
Implementing your new touch panel technology should be the least of your worries. Touch panel technology with a wide range of compatibility with different operating systems makes implementation smooth and hassle free by allowing you to use the systems your employees are already familiar with.

Touch panels should be durable enough for your application.
Being durable will save money in the form of reduced maintenance and replacement costs. Since touch panels will be frequently interacted with, it is essential that they are durable enough to withstand repeated usage over time.



HOW TO CHOOSE A TOUCH PANEL?

As we discussed above, there are different types of touch technology to choose from, each with a different set of characteristics and capabilities. While one type of touch technology may be able to do more than the other, it may not always be the most economical choice to go for the most comprehensive technology, unless your particular application calls for it.

When looking into implementing touch panel technology, your starting point should be to first consider your needs:

+ Will you be using a touch screen monitor for your point-of-sale operations?
+ Will you be looking to implement a way for customers to sign digitally?
+ Will you need a combination of the two?

Another way to look into selecting the right solution for your business is to consider your business objectives:

+ Do you need to reduce queue times?
+ Are you looking for another way for customers to interact with your business?
+ Do you need a safer way for customer to sign for services?

We have an array of different touch screen monitor and digital signage products that cater to application specific usages that you can browse through as well. Whatever your objective is for implementing touch panel technology, our customer service representatives are able to consult you on where touch technology may be beneficial for you. Once you've decided on the best way to implement touch, we can help you develop a custom package tailored to your specific needs.

ViewSonic

ViewSonic has been an established worldwide source of monitor and display solutions for more than three decades. We firmly believe that the products and solutions we supply to our customers can help them to achieve better operational efficiency and to generate profitable growth.

Our product and solution experience in various industrial sectors have helped us to learn a great deal regarding our customer's real-life business problems and needs. Moreover, our innovative R&D capabilities have consistently allowed us to bring the right technology to the right customer at the right time.